

# ADDITIONS TO THE FLORA OF PUNJAB STATE, NORTH INDIA<sup>1</sup>

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Extensive surveys in Gurdaspur district of Punjab state have indicated that 69 species falling under 56 genera are new records. These plants are mostly from hilly ranges falling in Pathankot tehsil. Quite a number of plants are met with in Narot Jaimal Singh area across river Ravi bordering Pakistan.

## INTRODUCTION

During the years 1983-1986 we undertook botanical excursions throughout the district of Gurdaspur, Punjab state, North India under the Botanical Survey of India's 'District Flora Scheme'. Quite a good portion of the area of the district is sub-mountainous tract falling in Pathankot tehsil and is a part of the Shivalik range, the hills attaining a maximum height of 960 m (Katori) near Punjab-Himachal Pradesh border. A large part of the proposed Thein Dam reservoir falls in the hilly tract of Gurdaspur district and comes under the administrative Dhar Kalan block. A large number of hill plants found in the area, therefore constitute part of Punjab Flora and those reported new to the state have not earlier been recorded from the state in the taxonomic works that deal with either the whole or part of the area under study (Steward 1869, Bamber 1916, Parker 1918, Sabnis 1940-41, Stewart 1945, Nair & Nair 1963-66, Rau 1968, Singh 1971 and Nair 1978). It is interesting to note that some plants which occur in the Shivalik hills in the district are also met with in the plains area of the district particularly near Narot Jaimal Singh bordering Pakistan. The River Ravi demarcating India's International boundary flows mostly on the North-Western side of the district except for Narot Jaimal Singh which is across the river Ravi and is easily accessible from Kathua in J K state. Such hill species which are met within the plains area of the district are marked with an asterisk. Seeds or propagules of such species are easily carried down to the plains by streams and rivulets and these establish well under a

suitable environment. Our scrutiny of the literature and comparison at Botanical Survey of India, Dehradun Herbarium (BSD) have indicated that 69 species belonging to 56 genera falling in 28 families have not been reported previously from Punjab state and are enumerated here. The voucher specimens have been deposited in the herbarium of Punjabi University (PUN) and duplicates are at Herbarium of the Botanical Survey of India, Dehradun (BSD). The arrangement of families is the same as in 'Flora British India' by Hooker (1872-97).

## ENUMERATION OF NEWLY RECORDED TAXA

### RANUNCULACEAE

1. \**Clematis gouriana* Roxb. Climber, on all types of trees and shrubs in hill tract. Fl. & Fr. August-December. C.P. Singh 9728, Thein Dam, 2 October, 1983.

### BRASSICACEAE

2. *Lepidium perfoliatum* Linn. Common on higher slopes in shade. Fl. & Fr. January-March. C.P. Singh 13209, Katori, 10 March, 1986.

### POLYGALACEAE

3. *Polygala abyssinica* R.Br. On open hilly-slopes. Fl. & Fr. September-March. C.P. Singh 13216, Katori, 10 March, 1986.

### HYPERICACEAE

4. *Hypericum cernuum* Roxb. Along slopes. Fl. & Fr. March-May. C.P. Singh 13623, Katori, 10 March, 1986.

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## GERANIACEAE

5. \***Geranium lucidum** Linn. On roadsides and hill slopes.  
Fl. & Fr. March-May.  
*C.P. Singh* 13126, Thein Dam, 9 March, 1986.
6. \***G. ocellatum** Camb. Cool and shady places.  
Fl. & Fr. February-April.  
*C.P. Singh* 13172, Dunera, 10 March, 1986.
7. **G. wallichianum** Don ex Sweet. On slopes.  
Fl. & Fr. October-April.  
*C.P. Singh* 13197, Katori, 10 March, 1986.

## FABACEAE

8. **Argyrolobium flaccidum** Jaub. & Spach. In Valleys.  
Fl. & Fr. May-July.  
*C.P. Singh* 13630, Katori, 16 May, 1985.
9. **Atylosia crassa** Prain. Climbing on many trees and shrubs particularly *Carissa opaca* stapf.  
Fl. & Fr. December-April.  
*C.P. Singh* 13184, Dunera, 10 March, 1986.

## ROSACEAE

10. **Crotalaria pusilla** Heyne, Common along slopes.  
Fl. & Fr. October-March.  
*C.P. Singh* 13212, Katori, 10 March, 1986.
11. **Desmodium podocarpum** DC. Common along roadsides.  
Fl. & Fr. July-September.  
*C.P. Singh* 13624, Katori, 16 October, 1985.
12. **Pyrus pashia** Buch.-Ham. ex D. Don. Small, shade tree along hilly-slopes.  
Fl. & Fr. March- October.  
*C.P. Singh* 9722, Dunera, 1 October, 1983.
13. **Rosa brunonii** Lindl. Forest undergrowth.  
Fl. & Fr. April- May.  
*C.P. Singh* 13111, Dunera, 10 March, 1985.
14. **Rubus biflorus** Buch.-Ham. Roadside shrub.  
Fl. & Fr. April-May.  
*C.P. Singh* 13637, Katori, 18 May, 1985.
15. **R. ellipticus** Sm. Straggler Shrub, along roadsides.

Fl. & Fr. February-May.  
*C.P. Singh* 13202, Katori, 10 March, 1986.

## APIACEAE

16. **Bupleurum hamiltonii** Balak. Common on grassy slopes of hills.  
Fl. & Fr. October-December.  
*C.P. Singh* 13207, Katori, 10 March, 1986.
17. \***Scandix pecten-veneris** Linn. Along roadsides and field edges.  
Fl. & Fr. January-April.  
*C.P. Singh* 13151, Narot Jaimal Singh, 10 March, 1986.
18. \***Torilis japonica** (Houtt) DC. Along field edges and roadsides.  
Fl. & Fr. February-April.  
*C.P. Singh* 13152, Narot Jaimal Singh, 10 March 1986.

## CAPRIFOLIACEAE

19. \***Viburnum coriaceum** Bl. Hill sides.  
Fl. & Fr. July-September.  
*C.P. Singh* 10968, Thein Dam, 24 June, 1985.
20. \***V. erubescens** Wall. Small tree along hill slopes.  
Fl. & Fr. April-October.  
*C.P. Singh* 13263, Pathankot, 14 March, 1986.

## RUBIACEAE

21. \***Galium asperifolium** Wall. Common along slopes.  
Fl. & Fr. June-August.  
*C.P. Singh* 9453, Kahanpur. 6 August, 1983.
22. **G. histiflorum** Req. Common along hill-sides.  
Fl. & Fr. July-August.  
*C.P. Singh* 13638, Katori, 15 August, 1985.
23. **Plectronia neilgherrensis** Bedd. var. *char-tacea* Gamble. Small tree along rivers.  
Fl. & Fr. February-April.  
*C.P. Singh* 13204, Katori, 10 March, 1986.

## ASTERACEAE

24. **Achillea millefolium** Linn. Along terraced fields.  
Fl. & Fr. May-August.  
*C.P. Singh* 13113, Dunera, 10 August, 1985.

25. **Anaphalis busua** (Buch.-Ham.) Hand.-Mazz. Along slopes.  
Fl. & Fr. July-October.  
*C.P. Singh* 13183, Dunera, 10 August, 1985.

26. **A. contorta** Hook. f. Common along slopes.  
Fl. & Fr. July-September.  
*C.P. Singh* 13114, Dunera, 10 August 1985.

27. **Carpesium trachefolium** Less. As forest undergrowth.  
Fl. & Fr. July-September.  
*C.P. Singh* 13628, Katori, 15 August, 1985.

28. **Erigeron multicaulis** DC. Along the slopes.  
Fl. & Fr. May-October.  
*C.P. Singh* 13622, Katori, 16 October, 1985.

29. **Myractis wallichii** Less. Common along slopes.  
Fl. & Fr. June-September.  
*C.P. Singh* 13627, Katori, 16 October, 1985.

30. **\*Silybum marianum** (Linn.) Gaertn. Common along roadsides in Pathankot tehsil.  
Fl. & Fr. February-May. *C.P. Singh* 13192, Shahpur Kandi, 9 March, 1986.

31. **\*Taraxacum officinale** Webber. Along roadsides and moist places.  
Fl. & Fr. December-April.  
*C.P. Singh* 13162, Narot Jaimal Singh, 10 March, 1986.

## LOBELIACEAE

32. **\*Lobelia heyniana** Roem. & Schult. Common in shady, grassy places.  
Fl. & Fr. September-December.  
*C.P. Singh* 9454, Sujapur, 6 August, 1986.

## PRIMULACEAE

33. **Androsace umbellata** (Lour.) Merr. Common in damp and exposed places.  
Fl. & Fr. February-April.  
*C.P. Singh* 13156, Bhattwan, 10 March, 1986.

## SYMPLOCACEAE

34. **\*Symplocos sumuntia** Buch.-Ham. ex D. Don. Large shrub, along roadsides.  
Fl. & Fr. September-November.  
*C.P. Singh* 9717, Dunera. 1 October, 1983.

## OLEACEAE

35. **\*Jasminum humile** Linn. Along hedges, wild.

Fl. & Fr. August-October, March-April.  
*C.P. Singh* 13169, Narot Jaimal Singh, 10 March, 1986.

36. **\*J. multiflorum** (Burm. f.) Andr. Along roadside hedges, wild.

Fl. & Fr. October-March.  
*C.P. Singh* 13168, Narot Jaimal Singh, 10 March, 1986.

## GENTIANACEAE

37. **Centaurium centauroides** (Roxb.) comb. nov. Along the canals and water channels.  
Fl. & Fr. March-June.

*C.P. Singh* 13282, Madhopur, 13 March, 1986.

38. **Gentiana argentea** (Royle ex D. Don) DC. Along hill slopes. Fl. & Fr. February-March.

*C.P. Singh* 13187, Katori, 10 March, 1986.

39. **Swertia purpurescens** Wall. Common along hilly slopes. Fl. & Fr. August-September.

*C.P. Singh* 13639, Katori, 16 September, 1985.

## CONVOLVULACEAE

40. **Ipomoea muricata** (Linn.) Jacq. Climbing on trees and shrubs in hedges.

Fl. & Fr. September-November.  
*C.P. Singh* 13625, Katori, 15 October, 1985.

41. **Ipomoea sindica** Stapf. In cultivated fields.  
Fl. & Fr. August-October.

*C.P. Singh* 12225, Madhopur, 19 October, 1985.

## SCROPHULARIACEAE

42. **Limnophila connata** (Buch.-Ham. ex Don) Hand.-Mazz. In moist places.

Fl. & Fr. September-October, February-April.  
*C.P. Singh* 13243, Madhopur, 13 March, 1986.

43. **Limnophila indica** (Linn.) Druce. In moist places.

Fl. & Fr. October-April.  
*C.P. Singh* 13244, Madhopur, 13 March, 1986.

44. **Sutera dissecta** (Del.) Walp. In moist places.  
Fl. & Fr. February-April.  
*C.P. Singh* 13241, Madhopur, 13 March, 1986.

## ACANTHACEAE

45. **Barleria buxifolia** Linn. Along hedges.  
Fl. & Fr. July-April.  
*C.P. Singh* 13185, Katori, 10 March, 1986.
46. **\*Rostellularia diffusa** Nees. In moist places.  
Fl. & Fr. September-February.  
*C.P. Singh* 9740, Murgala (Dinanagar), 3 October, 1983.
47. **\*R. mollissima** Nees. In waste and shady places.  
Fl. & Fr. September-February.  
*C.P. Singh* 9719, Dunera, 10 October, 1983.

## LAMIACEAE

48. **Ajuga parviflora** Benth. Roadside herb of hilly areas.  
Fl. & Fr. March-May.  
*C.P. Singh* 13215, Katori, 10 March, 1986.
49. **Nepeta graciliflora** Benth. Along roadsides in hilly areas. Fl. & Fr. September-November, March-April.  
*C.P. Singh* 13201, Katori, 10 March, 1986.
50. **Plectranthus japonicus** (Burm.f.) Koidz. Along hill-slopes. Fl. & Fr. October-March.  
*C.P. Singh* 13208, Katori, 10 March, 1986.

## PLANTAGINACEAE

51. **Plantago lanceolata** Linn. Along roadsides in grassy localities.  
Fl. & Fr. March-May.  
*C.P. Singh* 13203, Katori, 10 March, 1986.

## POLYGONACEAE

52. **Polygonum alatum** Buch.-Ham. In damp places.  
Fl. & Fr. January-November.  
*C.P. Singh* 13620, Katori, 12 January, 1985.
53. **P. amplexicaule** Don. In moist places.  
Fl. & Fr. June-October,  
*C.P. Singh* 13116, Katori, 13 August, 1985.

54. **P. capitatum** Buch.-Ham. Along roadside rocks and walls in hilly tract.  
Fl. & Fr. June-November.  
*C.P. Singh* 13117, Katori, 13 August, 1985.
55. **P. donii** Meissn. In moist places.  
Fl. & Fr. July-October.  
*C.P. Singh* 9460, Cantonment (Pathankot), 7 October, 1983.

## LORANTHACEAE

56. **Loranthus pulverulentus** Wall. Semi-parasite on *Dalbergia sissoo* Roxb. and other trees in hill-tract.  
Fl. & Fr. September-November; March-April.  
*C.P. Singh* 9714, Dunera, 1 October, 1983.
57. **Scurrula cordifolius** (Wall.) G. Don. On many trees.  
Fl. & Fr. September-October; March-April.  
*C.P. Singh* 13182, Dunera, 10 March, 1986.

## EUPHORBIACEAE

58. **Flueggea virosa** Roxb. ex Willd. Small tree of slopes.  
Fl. & Fr. March-October.  
*C.P. Singh* 13120, Dunera, 10 March, 1986.

## ULMACEAE

59. **\*Trema orientalis** Roxb. Small tree, along roadsides.  
Fl. & Fr. July-October.  
*C.P. Singh* 9416, Chakki Bridge (Pathankot),  
5 August, 1983.

## LILIACEAE

60. **Asparagus adscendens** Roxb. Straggler of hilly roadsides.  
Fl. & Fr. October-March.  
*C.P. Singh* 13189, Niari, 10 March, 1986.
61. **Nothoscordum inodorum** (Ait.) Nicholson. Newly introduced herb into India. As orchard undergrowth.  
Fl. & Fr. January-March.  
*C.P. Singh* 10948, Batala, 7 January, 1985.
62. **Tulipa stellata** Hook.f. Roadsides and fields in hill-tracts. Fl. & Fr. March-April.  
*C.P. Singh* 13161, Bhamlada, 10 March, 1986.

JUNCACEAE

63. **Juncus concinnus** Don. Along higher slopes.  
Fl. & Fr. July-September.  
*C.P. Singh* 13631, Katori, 15 August, 1985.

CYPERACEAE

64. **Cyperus cyperoides** (Linn.) O. Kuntze. Along forest and field edges.  
Fl. & Fr. July-November.  
*C.P. Singh* 9422, Chakki bridge (Pathankot),  
5 August, 1983.

POACEAE

65. **Chrysopogon fuluus** (Spreng.) Choiv. Common on gravelly and rocky slopes in hill-tract.  
Fl. & Fr. July-September.  
*C.P. Singh* 13632, Katori, 16 August, 1985.
66. **Eragrostis curvala** Nees. Common in waste places.  
Fl. & Fr. January-April.

*C.P. Singh* 13249, Dera Baba Nanak, 6 March, 1986.

67. **Pennisetum flaccidum** Griseb. Along hill-slopes.  
Fl. & Fr. September-November.  
*C.P. Singh* 13635, Katori, 15 August, 1985.
68. \***Themeda villosa** (Poir) d. Camus. In river beds and field edges.  
Fl. & Fr. August-November.  
*C.P. Singh* 13633, Katori, 16 October, 1985.
69. **Tripogon filiformis** Nees. Common along hill-slopes.  
Fl. & Fr. September-November.  
*C.P. Singh* 12220, Thein Dam, 10 September, 1985.

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REFERENCES

- BAMBER, C.J. (1916): Plants of the Punjab. Lahore.
- HOOKE, J.D. (1872-97): The flora of the British India. Vols. 1-7. London.
- NAIR, N.C. (1978): Flora of the Punjab plains. *Rec. Bot. Surv. Ind.* 21(1): i-xx, 1-326.
- NAIR, N.C. & NAIR, V.J. (1963-66): Some plants records for the Punjab Plain. *Bull. Bot. Surv. Ind.* 5: 219-222; 6: 69-71; 299-300; 8: 351-352.
- PARKAR, R. N. (1918): A Forest Flora for the Punjab with Hazara and Delhi. Lahore.
- RAU, M.A. (1968): Flora of the Upper Gangetic Plain and of the adjacent Siwalik and Sub-Himalayan Tracts. Check list. *Bull. Bot. Surv. India* 10 (Supplement No. 2): 1-87.
- SABNIS, T.S. (1940-41): A contribution to the Flora of the Punjab Plains and the Associated Hill Regions. *J. Bombay nat. Hist. Soc.* 42: 124-149; 342-379; 533-586.
- SINGH, U. (1971): Additions to Duthie's Flora of the Upper Gangetic Plain. *ibid.* 68: 339-346.
- STEWART, J.L. (1869): Punjab Plants. Lahore.
- (1945): The Grasses of Northwest India. *Brittonia* 5: 404-468.